UNDESCRIBED SPECIES OF NEMATOCEROUS DIPTERA. PART IX[1]

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The preceding part under this general title appeared in December 1959 (Bul. Brooklyn Ent. Soc. 54: 129–135). The species treated herewith are from Sikkim, in the eastern Himalayas of India, where they were collected in 1959 by Dr. Fernand Schmid. I am very deeply indebted to Dr. Schmid for the privilege of studying these exceptionally interesting flies, the types of which are preserved in my personal collection.

TANYDERIDAE

Protanyderus sikkimensis, n. sp.

Size medium (wing of male 10 mm.); general coloration of mesonotal praescutum brownish yellow, patterned with brownish gray; legs yellow, the tips of the femora weakly infuscated; wings subhyaline with a medium brown crossbanded pattern, the dark areas narrowly bordered by darker, the interspaces broader than the darkened bands; basal darkening not connected with the central area along vein *Cu;* male hypopygium with the spine of the dististyle acute at tip.

Male: Length about 10 mm.; wing 10 mm.

Female: Length about 11 mm.; wing 13 mm.

Rostrum brown, palpi and mouthparts black. Antennae short, black throughout; pedicel very large, flagellar segments subcylindrical, much shorter than the verticils. Head brownish gray.

Cervical sclerites and pronotum dark brown. Mesonotal praescutum with the ground brownish yellow, with four confluent brownish gray stripes, the narrow interspaces with yellow setae from darkened punctures; median region of scutum and the scutellum brownish yellow, the latter slightly darkened medially, postnotum grayish brown. Pleura and pleurotergite chiefly yellowish brown. Halteres with stem yellow, knob dark brown. Legs with coxae and trochanters brownish yellow; femora yellow, tips weakly infuscated; tibiae and tarsi uniformly yellow, the last tarsal segment a little darker. Wings subhyaline, with a medium brown crossbanded pattern, the dark areas narrower than the interspaces, pale brown, narrowly but conspicuously margined with darker, paler

[1] Contribution from the Entomological Laboratory, University of Massachusetts.

than in *schmidi;* a dark area at arculus, widely separated from the second band at origin of *Rs,* the two confluent behind across the bases of the Anal cells; third band largest, expanded along costa, narrowed behind, reaching the posterior border at veins *Cu* and *A,* not connected along vein *Cu* with the first band, as in *schmidi;* the narrower outer band occupies the cord, broadest at costa, reaching the posterior border at veins M_3 and M_4, in the outer radial field sending a branch to the wing tip; ground interspaces more extensive than in *schmidi;* cell *C* variegated with dark and pale areas, in the male cell *Sc* similarly patterned; space between the branches of *Cu* pale with a series of brownish black spots, this area uniformly darkened in *schmidi;* veins yellow, a trifle darker in the patterned areas. Venation: Basal section of R_5 very short.

Abdomen yellowish brown, tergites freckled with darker brown setigerous punctures, sternites less evidently patterned. Male hypopygium with the posterior border of the tergite with a broad V-shaped notch. Dististyle relatively long and slender, not conspicously expanded opposite the base of its lateral spine, this acute at tip; apex of style with numerous setae.

Habitat: Sikkim. *Holotype:* ♂, Ramtang, 5780 feet, October 13, 1959 (Fernand Schmid). *Allotopotype:* ♀.

The types were found at night beneath stones along the bank of a mountain torrent, associated with a second species of the genus, *Protanyderus venustipes,* n. sp.

Protanyderus sikkimensis is quite distinct from the other Himalayan members of the genus, all differing among themselves in the pattern of the legs and especially of the wings. The occurrence in a single place of two distinct species of *Protanyderus,* as discussed above, might seem to indicate the possibility of a more extensive fauna of Tanyderid flies in the Indo-Chinese Region.

Protanyderus venustipes, n. sp.

Size medium (wing of female over 13 mm.); general coloration of thorax dark brown; legs handsomely patterned, femora black, tibiae and tarsi yellow, the ends blackened; wings whitened, with a very conspicuous dark brown pattern, the general appearance being of a darkened wing with eight white areas, the two basal ones small; male hypopygium with the lateral spine of the dististyle slender.

Male: Length about 11 mm.; wing 9.5 mm.; antenna about 1.5 mm.

Female: Length about 10–11 mm.; wing 13.5–14 mm.; antenna about 1.6 mm.

Rostrum, mouthparts and palpi black. Antennae relatively short, black throughout; flagellar segments subcylindrical, much shorter than the longest verticils, with a dense white pubescence. Head dark gray, the posterior vertex darker medially.

Cervical region and pronotum brownish black, brown laterally. Mesonotal praescutum and scutum dark brown, with a slightly darker faintly impressed median line; scutellum dark brown, paler basally; postnotum and pleura dark brown. Halteres with stem light yellow, knob blackened. Legs with coxae and trochanters black, weakly pruinose; femora black; tibiae light yellow, the base blackened, the tip more broadly so, about equal to one-fourth or one-fifth the yellow part; basitarsus light yellow, the extreme base vaguely darkened, outer fifth blackened, remainder of tarsi black. Wings with the ground whitened, with a very conspicuous dark brown pattern including three oblique crossbands, all interconnected so that the dark color in places extends from the wing base to the apex; the general appearance is of a darkened wing with eight white areas, two small basal ones postarcular, the others much larger, including an oval area before cord in cells *R* and *M*, a larger one caudad of this in cells *Cu* and *A;* smaller areas in outer radial field before the fork and at the wing tip; the largest area lies beyond the cord, extending from the posterior border of cell R_5 to the margin in cell M_4; the remaining white marking occupies the wing tip in the medial field; cell *C* with alternating white and brown lines, in cases the dark color very heavy; cell R_4 uniformly darkened or virtually so; in the allotype, cells of posterior half of wing with paler centers; axillary area basad of the arculus light yellow; veins light yellow in the ground, light brown in the darkened parts. Venation: Veins M_4 and Cu_1 widely divergent, cell M_4 at margin extensive.

Abdomen dark brown, without evident frecklings. Male hypopygium with the tergite narrowed posteriorly, the border with a V-shaped notch. Dististyle with the lateral spine more slender than in *sikkimensis,* the outer end of style shorter, with longer setae.

Habitat: Sikkim. *Holotype:* ♂, Ramtang, 5780 feet, October 13, 1959 (Fernand Schmid). *Allotopotype:* ♀. *Paratopotypes:* 2 ♀♀. At night beneath stones on bank of a mountain torrent, associated with *Protanyderus sikkimensis,* n. sp.

Protanyderus venustipes is readily told from the other Himalayan species, *P. schmidi* Alexander and *P. sikkimensis,* n. sp., by the distinctive pattern of the legs and wings.

TRICHOCERIDAE

Paracladura superbiens, n. sp.

Size large (wing of female over 5.5 mm.); general coloration dark brown; wings pale yellow, conspicuously patterned with brown, including a broad band at cord and seams over the outer veins from R_5 to M_4 inclusive; R_{2+3+4} relatively short, from one-half to three-fifths R_{2+3}.

Male: Length about 5 mm.; wing 6–7 mm.

Female: Length about 4–6 mm.; wing 5.6–8 mm.; antenna about 3–4 mm.

Rostrum brown, mouthparts paler; palpi black. Antennae shorter than the body; scape and pedicel light yellow, flagellum black, the outer segments paler. Head brownish gray.

Pronotal scutum dark brown, scutellum paler brown. Mesonotum chiefly dark brown, the praescutum on sides before suture and the parascutella paler. Pleura dark brown, paler behind. Halteres with stem yellow, knob black. Legs with coxae brownish yellow, fore pair darker; trochanters testaceus yellow; femora brown, bases somewhat paler; tibiae and tarsi darker brown. Wings of type pale yellow, conspicuously patterned with brown, including a broad band at cord, extending from costa to end of vein *Cu*, slightly interrupted on vein M_{3+4}; other darkenings on veins R_5 to M_4 inclusive; a broad seam in cell *Cu* behind vein Cu_2, including more than one-half the length of the cell; cell *2nd A* darkened; veins yellow, conspicuously darker in the patterned areas. In some paratype specimens wings less heavily patterned, with virtually the only darkening being the band over the cord. Costal and Anal fringes long; macrotrichia on longitudinal veins beyond arculus, longer on veins beyond cord, very small nearer the arculus, on *2nd A* with two or more at near midlength of the vein. Venation: R_{2+3+4} about one-half to three-fifths R_{2+3}; *m-cu* on M_4, in cases to nearly its own length; cell *2nd A* narrow.

Abdominal tergites dark brown, sternites with the posterior borders paler. Ovipositor with the cerci long-triangular. Male hypopygium with the dististyles simple. Phallosome with paired dark-colored central rods and small slender simple gonapophyses.

Habitat: Sikkim. *Holotype:* ♀, Yagtang, 11,200 feet, in *Rhododendron* association, May 28, 1959 (Fernand Schmid). *Allotype:* ♂, Tangshing, 12,200 feet, in *Rhododendron* association, October 5, 1959. *Paratopotypes:* 4 ♀♀. *Paratypes:* 1 ♀, 2 ♂♂, with the allotype.

Paracladura superbiens is quite distinct from *P. elegans* Brunetti,

the only other regional species of the genus having patterned wings. It is the largest species of *Paracladura* so far discovered, rivalling in size the medium-sized members of the genus *Trichocera.*

Trichocera auripennis, n. sp.

General coloration black; legs black, femoral bases yellow; wings brownish yellow beyond the cord, the base clear light yellow; *Rs* and most veins beyond the cord conspicuously seamed with brown.

Female: Length about 7 mm.; wing 9.3 mm.; antenna about 4 mm.

Rostrum and palpi black, terminal segment of the latter about one-half longer than the penultimate. Antennae relatively long, brownish black, outer flagellar segments paler; first flagellar segment a trifle longer than the second, the latter subequal to segments three to six, succeeding segments becoming much longer and attenuated. Head black.

Thorax uniformly black, surface subnitidous; praescutum with sparse setae, two above the humeri much longer. Halteres yellowed, the apex of knob destroyed by pests. Legs with coxae black; trochanters brownish black; remainder of legs black, the femoral bases yellowed, on the fore and hind pairs including about the proximal sixth, on the mid femora nearly the proximal third. Wings brownish yellow beyond the cord, the base, especially the prearcular and costal fields, clear light yellow; *Rs,* outer third of *M* and the veins at and beyond the cord seamed with brown, least so on R_{1+2}, R_3 and R_4, very heavy on cord and outer end of cell *1st* M_2; veins in the infuscated parts dark brown, in the brightened fields clear yellow, including *C, Sc, R,* Cu_1, Cu_2, *2nd A* and the narrow bases of *M* and *1st A.* Macrotrichia of veins relatively short, lacking on *2nd A,* base of *Sc* and proximal third of *M* and *1st A.* Venation: Sc_1 ending just beyond R_2, Sc_2 about opposite one-third to one-fourth the long *Rs;* R_{2+3+4} straight, nearly twice as long as the elevated R_{2+3}; inner end of cell *1st* M_2 pointed; cell M_1 about one-third longer than its petiole; *m-cu* shortly before the fork of M_{3+4}; cell *2nd A* wide; a faint yellow supplementary vein behind vein *1st A,* in appearance somewhat similar to Cu_2.

Abdomen uniformly black. Ovipositor yellowish brown; cerci relatively stout, outer half narrowed and strongly decurved to the acute tips.

Habitat: Sikkim. *Holotype:* ♀, Tangshing, 14,100 feet, in *Rhododendron* association, October 6, 1959 (Fernand Schmid).

Trichocera auripennis is entirely distinct from all other species

in the yellow wings, especially striking on the proximal half. Attention is called to the supplementary vein behind *1st A* which here is better indicated than in most species of the genus.

Trichocera thaumastopyga, n. sp.

Size medium to large (wing generally about 10 mm.); general coloration black, surface dull; halteres and legs black; wings broad, whitened, with an abundant dotted pale brownish gray pattern, including spots in cells excepting *C, Sc, 1st* M_2 and *2nd A;* ovipositor with cerci long-oval; male hypopygium complex in structure, the sixth and seventh tergites modified into a tenaculum for holding it.

Male: Length about 6.5–8 mm.; wing 7.5–10 mm.; antenna about 4–4.5 mm.

Female: Length about 8–8.2 mm.; wing 10.5–11 mm.; antenna about 5 mm.

Rostrum dark gray with long porrect setae; palpi short, black; mouthparts projecting as flattened blades. Antennae long, black, apex of pedicel narrowly paler; first flagellar segment about one-half longer than the second; segments with short dense pale pubescence. Head dark brownish gray; vertical tubercle large, rounded, the lateral ocelli on its sides; posterior vertex and occiput more depressed; sides of posterior vertex with long coarse setae.

Thorax black, the surface appearing dull by a slight gray pruinosity, intermediate praescutal stripes slightly indicated, the lateral pair less so; praescutal setae sparse but long, especially the anterior ones; scutal setae long, upcurved. Halteres brownish black. Legs with coxae and trochanters black; remainder of legs black, the bases of the fore femora very narrowly and vaguely paler; middle and hind basitarsi with erect spinoid setae additional to the normal vestiture. Wings broad, ground whitened, with a very abundant pale gray dotted pattern, the spots occurring in all cells excepting *C, Sc, 1st* M_2 *and 2nd A;* spots circular in outline, tending to become confluent, averaging about six or seven in cells R_4, R_5, *Cu* and *1st A,* somewhat fewer in other cells; in cases, two or three darkened spots in the costal cell; veins slender, brownish black. Macrotrichia of veins small but abundant, lacking on most of *Sc* basad of Sc_2, *M* and *2nd A; Rs* and *1st A* without trichia on about the proximal third. Venation: Sc_1 ending just before R_2, Sc_2 about opposite one-third the length of *Rs;* R_{2+3+4} about one-half R_{2+3}; cell M_1 nearly twice its petiole; cell *1st* M_2 pointed at inner end; *m-cu* before the fork of M_{3+4}; cell *2nd A* moderately broad.

Abdomen dull black, including the male hypopygium; genitalia of female brown. Ovipositor with the cerci long-oval, narrowed to the blunt tip; hypovalvae stout basally, decurved and narrowed outwardly, tips truncate. Male with the sixth tergite on either side of the midline with about 25 very strong black spinous bristles that are directed caudad, lacking on the mid-region; seventh tergite with a small median sclerotized Y-shaped rod directed caudad; these structures form a tenaculum for holding the recurved male hypopygium. Hypopygium complex; basistyle with the inner face produced mesad into a large flattened subtriangular blade, its outer part with delicate setae, near base farther produced into a more slender flattened arm, more or less cultrate in outline. Dististyle slightly curved on basal half, the outer end dilated into a head, farther produced into a long black spine, the head with an outer lobule bearing several very long bristles; base of head cephalad of the spine with numerous more crowded bristles. Gonapophyses appearing as flattened blades, narrowed to acute tips.

Habitat: Sikkim. *Holotype:* ♂, Tangshing, 14,100 feet, in *Rhododendron* association, October 6, 1959 (Fernand Schmid). *Allotopotype:* ♀. *Paratopotype:* 1 ♀; *paratype:* ♂, Lachmi Pokri, in *Rhododendron* association, 14,000 feet, October 11, 1959.

Trichocera thaumastopyga is unquestionably the most remarkable species of the genus so far discovered. Not only is the male hypopygium unusually complex in structure, but the modified sixth and seventh tergites forming a tenaculum for the hypopygium in a position of rest is unique in the family. The ovipositor likewise is aberrant in structure. The paratype is smaller than the type but undoubtedly is conspecific. Superficially the fly most resembles species such as *T. punctipennis* Brunetti (*versicolor* Loew) or *T. reticulata* Alexander, all having the hypopygium unmodified. Species of *Trichocera* having complex male hypopygia now include the Eurasian *T. forcipula* Nielsen, *T. lutea* Becher, *T. mirabilis* Alexander, *T. schmidi* Alexander and *T. stecki* Bangerter, and the North American *T. colei* Alexander, *T. salmani* Alexander and *T. ursa-major* Alexander.